Emergency Preparedness

Significance Determination Process

Definitions

- Emergency Preparedness (EP) inspection finding:
  - An observation of an emergency preparedness program element that has been placed in context and assessed for significance

- EP Planning Standards (PS):
  - 50.47 (b) and Appendix E

- Risk-Significant PS (RSPS):
  - 50.47(b)(4), (5), (9), & (10)
  - Appendix E section IV(B), (C), (D)(1) and (D)(3)

Definitions

- 50.47 (b) (4):
  - A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures

- 50.47 (b) (5):
  - Procedures have been established for notification, by the licensee, of State and local response organizations and for notification personnel by all organizations; the content of initial and follow up messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway EPZ have been established

Definitions

- 50.47 (b) (9):
  - Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use

- 50.47 (b) (10):
  - A range of protective actions have been developed for the plume exposure pathway EPZ for emergency workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed

Definitions

- Appendix E section IV B:
  - The means to be used for determining the magnitude of and for continually assessing the impact of the release of radioactive materials shall be described ...

- Appendix E section IV C:
  - The entire spectrum of emergency conditions that involve the alerting or activating of progressively larger segments of the total emergency organization shall be described ... EALs for notification of offsite agencies shall be described ...

Definitions

- Appendix E section IV D(1):
  - Administrative and physical means for notifying local, State, and Federal officials and agencies and agreements reached with these officials and agencies for the prompt notification of the public and for public evacuation or other protective measures ... shall be described

- Appendix E section IV D(3):
  - A licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency ...

Definitions

- failure to implement a planning standard:
  - Failure to implement a PS means that Plan commitments that implement a PS were not fulfilled during an actual event. Failure to implement such commitments during a drill is a performance problem that should be corrected, but is not a *failure to implement a PS* as the term is used in this SDP. Generally, failure to implement a PS is the result of personnel errors. The associated program elements are adequate and would have met the Plan commitments if they had been implemented.

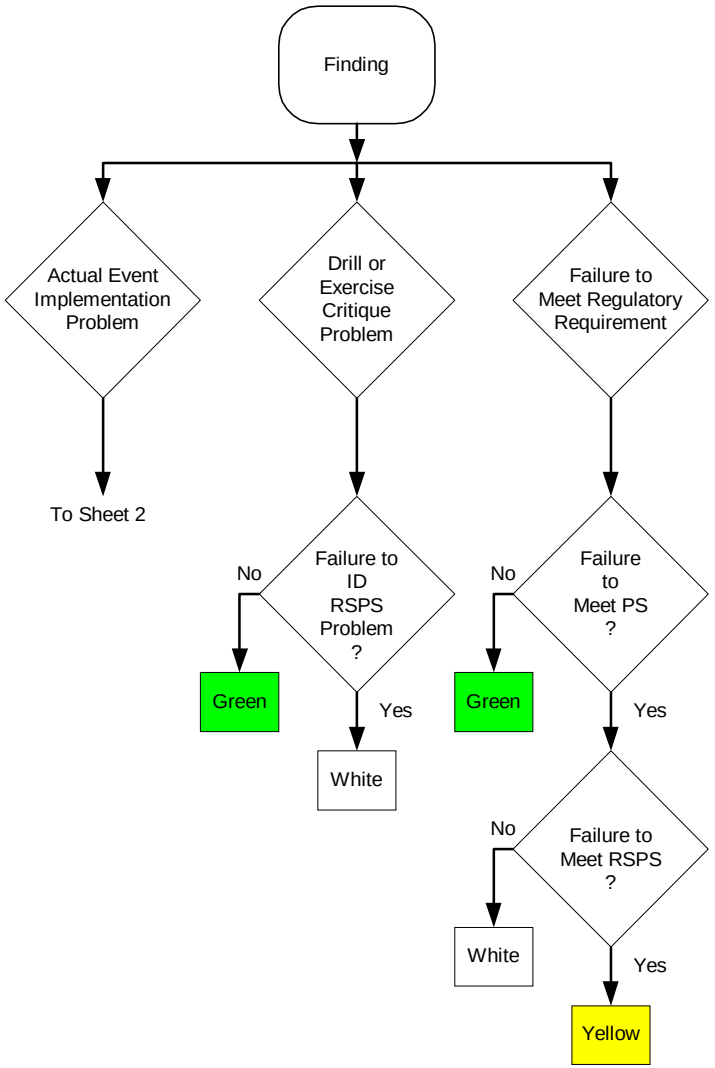
Definitions

- failure to meet a planning standard:
  - Failure to meet a PS means that program elements are not in compliance with the PS of 10 CFR 50.47(b) and/or the supporting requirements of Appendix E. It may be that the Plan commitments are not met, that the Plan is inadequate, that implementing procedures are inadequate, that program design is inadequate, etc. However, the measure of program compliance is the PS and its articulation in NUREG-0654, taking into consideration any deviations from NUREG-0654 (and the compensating program elements) that were approved by NRC.

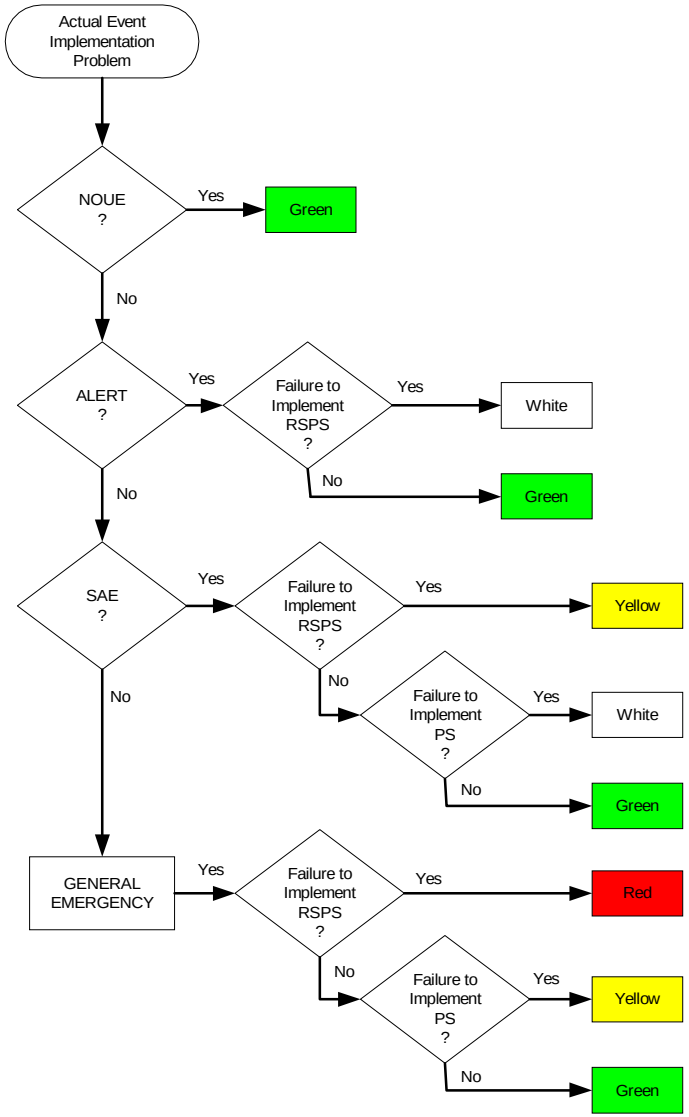
Definitions

- Drill/Exercise Critique Problem:
  - The licensee's critique of the Drill or Exercise failed to identify problems with ERO performance that the NRC inspectors observed

NRC Significance Determination Process for Emergency Preparedness Inspection Findings



NRC Significance Determination Process for Emergency Preparedness Inspection Findings



Sheet 2

2/18/00

Emergency Preparedness SDP

Case Studies

EP SDP Case Study #1

- During an inspection, the inspectors found that the Shift Technical Advisors (STAs), responsible for on shift dose assessment, were not trained in the use of a new computerized dose assessment program and could not perform dose assessment using the systems committed to in the emergency plan. The licensee did not have a back up (manual) dose projection procedure nor any other personnel who could calculate doses. The STAs were the only on shift dose assessment capability.

EP SDP Case Study #1 Answer

- 1) Finding —> sheet 1
  - Actual Event? No
  - Drill/Exercise Critique? No
- 2) Failure to meet Regulatory Requirement? Yes
  - a) Violation of 50.47(b)(15) : Radiological emergency response training is provided to those who may be called on to assist in an emergency
    - Personnel have not been trained.
    - Result: **White**
  - b) Violation of 50.47(b)(9) : Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.
    - Systems may be adequate, but are not in use.
    - Result: **Yellow**

EP SDP Case Study #1 Answer

  - Failure to meet a PS and a RSPS

- The SDP analysis will assign the most significant of the findings.

- Overall Result: **Yellow**

EP SDP Case Study #2

- After the inspection, the licensee updates its corrective actions system and enters as action items the development of a manual dose projection procedure and the training of the STAs in the use of the new computer program. The inspectors come back to the site the following year and find out that the STAs have been trained but that the procedure has not been developed.

EP SDP Case Study #2 Answer

- 1) Finding —> sheet 1
  - Actual Event? No
  - Drill/Exercise Critique? No
  - Failure to meet Regulatory Requirement? Yes
- 2) Failure to meet Regulatory Requirements
  - a) Failure to meet the E-plan commitment for backup dose projection method
  - Result: **Green**
  - b) Failure to resolve problem related to RSPS? 50.47(b)(9) : Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

EP SDP Case Study #2 Answer

  - No, because the RSPS is met, in that an adequate method is in use to assess offsite consequences, but the Emergency Plan commitment for a back up system is not in place.
  - Result: No finding

- Overall Result: **Green**

EP SDP Case Study #3

- Observing a biennial exercise, the inspectors found that the TSC staff did not demonstrate that it could accurately determine a primary-to-secondary leak-rate with the assessment tools available to them and early in the exercise for about 75 minutes, the staff misinterpreted total RCS leak-rate due to a loss of coolant accident, as primary-to-secondary leakage. However, once they identified this error, they were still unable to accurately calculate the primary to secondary leak rate. This passed unnoticed at the critique conducted by the licensee at the end of the exercise. In addition, after further investigations, the inspectors found that during the previous evaluated exercise, the TSC staff committed a similar error in assessment of source term due to SG leak rate.

EP SDP Case Study #3 Answer

- 1) Finding —> sheet 1
  - Actual Event? No
  - Drill/Exercise Critique? Yes
  - Failure to meet Regulatory Requirement? Yes

- 2) Critique Problem—> Failure to ID RSPS problem.
  - Result: **White**

EP SDP Case Study #3 Answer

- 3) The RSPS implementation problem may indicate a program failure, i.e., failure to meet 50.47(b)(9). The failure to make a correct assessment of the primary to-secondary leakage was a repeat problem and procedures, training and tools were inadequate. Inspectors determined that it was a failure of the program in that the licensee could not accurately determine the source term from this accident due to inadequate methods.
  - Result: **Yellow**

- However, the only the most significant determination will be assessed against the licensee

- Overall Result: **Yellow**

EP SDP Case Study #4

- A plant experienced a loss of all vital DC power that led the licensee to declare a Site Area Emergency. Classification was made in a timely manner but notification to the offsite authorities were initiated 20 minutes after declaration of the emergency

EP SDP Case Study #4 Answer

- Finding —> sheet 1
  - Actual Event? Yes
  - Drill/Exercise Critique? No
  - Failure to meet Regulatory Requirement? No

- 2) Actual Event ς Sheet 2
  - Is it a failure to implement RSPS Appendix E section IV (D)(3) (A licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency)?

EP SDP Case Study #4 Answer

- It turns out that a failure to notify within 15 minutes is not a failure to implement the RSPS. The RSPS speaks to the design of the system. The notification was performed, but a few minutes late. If the notification was not performed or substantially late the RSPS would not have been implemented. The DEP PI shows a failed opportunity, but the PS was not violated.
- Result: **NA**

EP SDP Case Study #5

- During an NRC routine inspection, the inspectors found that the licensee had never tested 20 to 25 telephone lines at its alternate EOF (the Emergency Plan provides that in the event the EOF is uninhabitable, it will be relocated to the alternate EOF and that communications equipment is provided in the alternate EOF).

EP SDP Case Study #5 Answer

- 1)Finding —> sheet 1
  - Actual Event? No
  - Drill/Exercise Critique? No
  - Failure to meet Regulatory Requirement? Yes

- 2) Failure to meet Regulatory Requirements?
  - Appendix E section IV (E)(9) requires: provisions for communications with contiguous State/local governments within the plume EPZ. Such communications shall be tested monthly. However, these provisions were in place at the EOF, TSC and control room. The failure was only in the back up EOF, which is an Emergency Plan commitment.
  - Result: **Green**

EP SDP Case Study #6

- During an inspection of the Alert and Notification system, the inspectors looked at the results of the sirens tests performed during the last quarter. They found that 3 sirens had failed to perform their function at the last growl test two months ago. Further investigating the issue, the inspectors found that these 3 sirens were repaired five months ago as a result of their failure to function during a previous test. The maintenance department manager told the inspectors that an error was made when the sirens were repaired five months ago, which caused the sirens to fail again during the test that was performed 2 month ago. The sirens are now properly functioning.

EP SDP Case Study #6 Answer

- This is not a finding under the current system. ANS Reliability PI captures the problem. If the ANS PI were not in the licensee response band, additional NRC involvement may be appropriate.

    - Result: **NA**

EP SDP Case Study #7

- During a routine facility inspection at the Environmental Lab which serves as the backup of the in-plant laboratory during an emergency (as committed to in the plant's Emergency Plan), the resident inspector found that procedures did not exist to handle, transport, and analyze a post accident sampling system (PASS) sample and to assess potentially contaminated samples collected offsite during radiological emergency conditions. The Emergency Plan specifies that procedures are in place to handle, transport, and analyze a PASS sample

EP SDP Case Study #7 Answer

- 1) Finding —> sheet 1
  - Actual Event? No
  - Drill/Exercise Critique? No
  - Failure to meet Regulatory Requirement? Yes

- 2) Failure of PS?
    - No, it is a failure to meet E-plan commitments.
  - Result: **Green**